



Atty Docket No.: 0918.0257C (D-EOP-0254)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the PATENT application of

John C. Nelson et al.

Examiner: Thomson, Michelle, R.

Serial No.: 10/671,630

Art Unit: 3641

Filed: September 29, 2003

Confirmation No.: 6234

For: CLAMP FOR WEAPON MOUNT

**DECLARATION OF INVENTORS JOHN CARL NELSON
AND STEPHEN LESNIEWSKI UNDER 37 CFR 1.131**

John Carl Nelson and Stephen Lesniowski hereby declare the following:

1. We are joint inventors of the invention claimed in the above-identified patent application. The purpose of this Declaration is to demonstrate that the invention was both conceived and reduced to practice before March 20, 2000, the filing date of U.S. Patent No. 6,442,883.

2. John Nelson is presently employed by ITT Night Vision as a Senior Quality Engineer at the Night Vision facility located in Roanoke, Virginia, and was so employed at the time the invention was made. A related company, ITT Manufacturing Enterprises, Inc. is the assignee of the present application.

3. Stephen Lesniowski is presently employed by Custom Tool, 7533 Milk A Way Drive, Roanoke, Virginia 24019, as a Tool Maker and was so employed at the time the invention was made.

4. In the time period before the invention was made, John Nelson had been tasked with designing a weapon mount, and had developed several designs before conceiving the present invention, which prior designs did not prove to be suitable. Exhibit A, attached hereto, labeled at the top as Rotating Mount for Night Vision Weapon Mount Ball Detent Design, depicts one such prior design. In the right margin of Exhibit A is the cam, bolt and Belleville washer design of the present invention.

5. John Nelson conceived part of the present invention much before March 20, 2004, the filing date of the U.S. Patent No. 6,442,883. About the time of conception, Mr. Nelson verbally communicated information relating to his conception to Stephen Lesniowski of Custom Tool, who was going to build the weapon mount. The language used by Mr. Nelson to impart the information was approximately the following:

I would like a weapon mount to clear the rear sight having a clamp employing a cam mechanism with Belleville washers in series. I expressed the thought that it could be done with bolt to pin retaining cam wherein the cam would rotate in a plane in which the axial direction of the bolt lies. The arrangement which I verbally described is shown in the right margin of Exhibit A.

6. A lengthy discussion between Messrs. Nelson and Lesniowski ensued, from which the basic design of the clamp emerged including the subject matter described in Paragraph 5 above as well as a structure in which the cam worked against the stationary side of the clamp. A specific contribution made by Mr. Lesniowski was that the design could be accomplished using pins for the slide to work on.

7. Mr. Lesniowski, following the discussion with Mr. Nelson, built a weapon mount, and in doing so conceived and built additional features including specific clamp shape, specific cam shape, details of clamp design and cam ears.

8. Exhibit B, attached hereto, is an ITT Night Vision purchase requisition to Custom Tool dated much before March 20, 2000 and, signed by John Nelson, ordering the weapon mount, which was already built as of the requisition date since it was not possible to price the item until it was finished. The weapon mount was provided to ITT on or shortly after the requisition date, and this same weapon mount which was built and provided is depicted in Exhibit C, a group of photographs taken on April 5, 2000 for the purpose of submitting an updated patent disclosure. The relevant photographs of Exhibit C are the first page and the last eight pages. It will be seen that the photographs depict a device identical to that disclosed, shown in the drawings of, and claimed in the subject patent application. All claimed features including the clamp, bolt, cam, pivot pin, Belleville washers, double ears on cam, ledges, etc. are clearly shown in the photographs.

9. After the weapon mount provided by Custom Tool was inspected by Mr. Nelson and determined to be suitable to undergo testing, it was tested by Mr. Nelson much before March 20, 2000. The test was conducted by Mr. Nelson at Shrewsbury Machine, New Castle, Virginia because there is a rifle range behind this facility. The purpose of the test was to see if the mount would shake loose during the firing of a weapon. The device was mounted on an M5 carbine, and the test was successful in that the mount remained securely in place during the firing of the weapon. Further testing occurred in the weeks ahead, also successful. There were no witnesses to any of the tests except for Mr. Nelson. The tests were written up in Mr. Nelson's weekly reports and were transmitted to management. Mr. Nelson did not keep copies of the reports, and while it is possible that they exist somewhere in the company, there isn't a practical way to attempt to locate them.

10. Shortly after the successful testing, still much before March 20, 2000, Mr. Nelson made a sketch of the cam, bolt, and Belleville washer structure of the weapon mount, which appears in the right margin of Exhibit A. Shortly after that, well before March 20, 2000, Mr. Nelson prepared a first Record of Invention, Exhibit D, which included a written description of the invention. This was signed and sent through company channels. (The unsigned Exhibit D was obtained from Mr. Nelson's computer). Paragraph 6 of the Record of Invention, last four sentences, describes the subject invention.

11. Shortly after the Record of Invention was prepared, still much before March 20, 2000, in order to have a permanent record of the construction of the device, Mr. Nelson requested

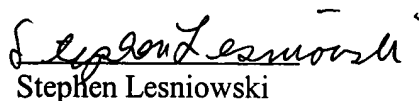
Mr. Lesniowski to prepare drawings of the device. Exhibit E comprises the group of drawings produced by Mr. Lesniowski.

12. The preparation of a second Record of Invention, Exhibit F, began before March 20, 2000. The purpose of this Record of Invention was to supplement the First Record of Invention and to include photographs of the device which would clearly show its structure. The group of photographs which comprise Exhibit C were taken, and some of the photographs from this group were incorporated in the description part of the Record of Invention, which was signed by the inventors on April 10, 2000.

It is hereby declared that all statements made herein of the undersigneds' own knowledge are true and all statements made on information and belief are believed to be true. It is understood that willful false statements and the like are punishable by fine or imprisonment, or both (18 USC 1001) and may jeopardize the validity of the application or any patent issuing thereof.


John C. Nelson

8-3-04
Date


Stephen Lesniowski

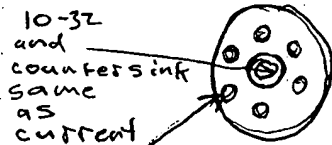
8/3/04
Date

Steve Brillhart
John Nelson

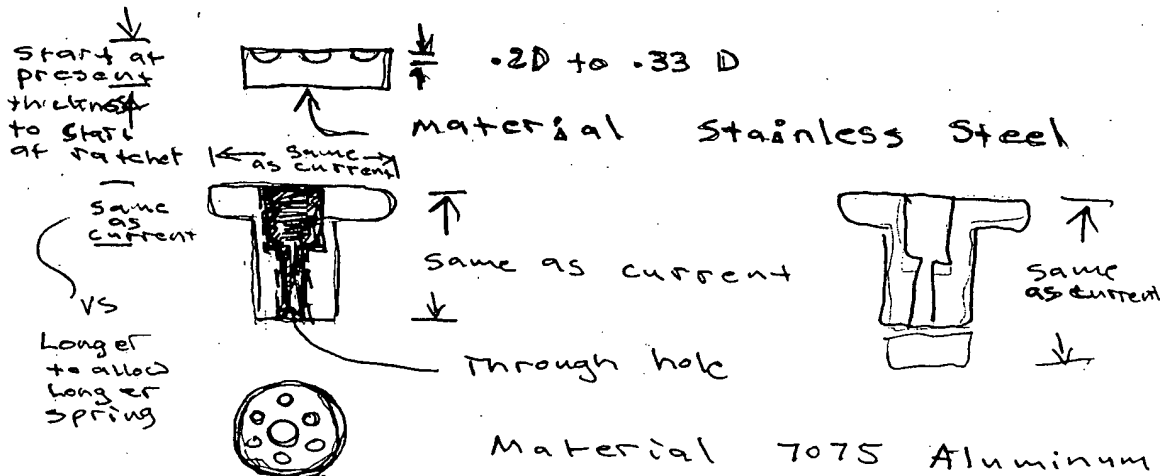
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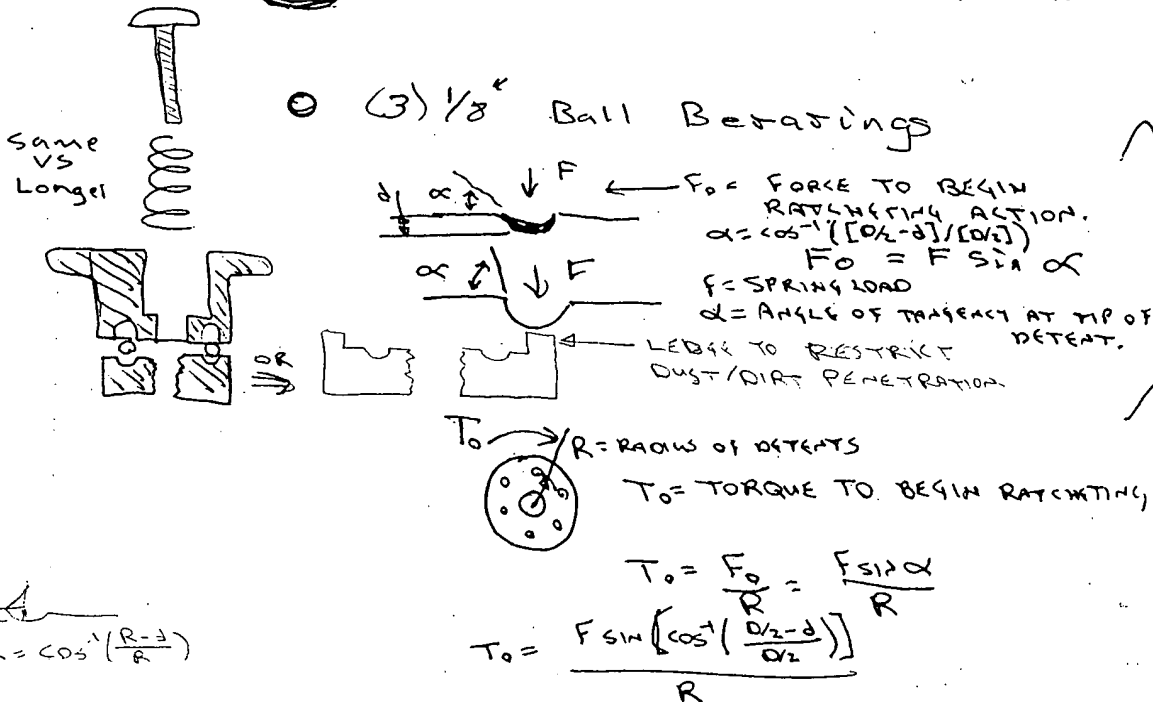
Ratcheting Mount for Night Vision Weapon Mount Ball Detent Design

$$D = 1/8''$$


1/8" Ball End Mill



③ (3) $1/8"$ Ball Bearings



177 Night Vision

1223 077

PURCHASE REQUISITION

SHEET 1 OF 1 PURCHASE ORDER NO. 81603-1

ORDER DATE

VENDOR NO. 121640

DELIVERY TO

INSPECTION REQUIRED

VIRGINIA

ORDER DATE

VENDOR NAME Custom Seal

QUANTITY ALLOW

YES

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NO

SHIP VIA

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QUANTITY ALLOW

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Type III

DELIVERY REQUESTED AS FOLLOWS:

RATING

QC APPROVAL

ITEM(S)

ITEM(S)

ITEM(S)

SUGGESTED OF EXISTING VENDOR

ISSUED BY

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APPROVED BY

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Exhibit B

Weapon Mnt Photos -April 5, 2000

5/4/2004

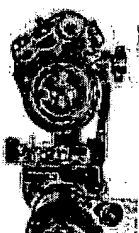
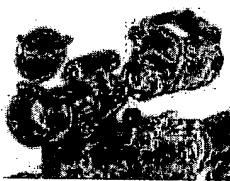

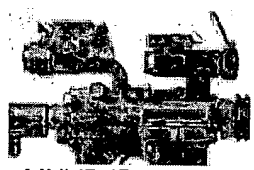





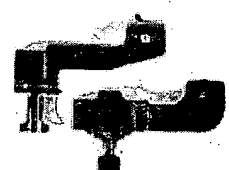
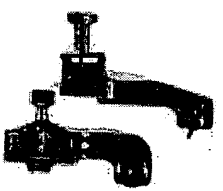
 MNVD IRAD Rifle BackView.jpg	 MNVD IRAD Rifle IsoLeftObj.jpg	 MNVD IRAD Rifle ProfLeft.jpg	 MNVD IRAD Rifle ProfRight.jpg	 Mount01.jpg
 Mount02.jpg	 Mount03.jpg	 Mount04.jpg	 Old Mount01_P002053.jpg	 Old Mount02_P002062.jpg
 Old Mount03_P002063.jpg				

Exhibit C

Weapon Mnt Photos -April 5, 2000 / MNVD IRAD Rifle BackView

5/4/2004



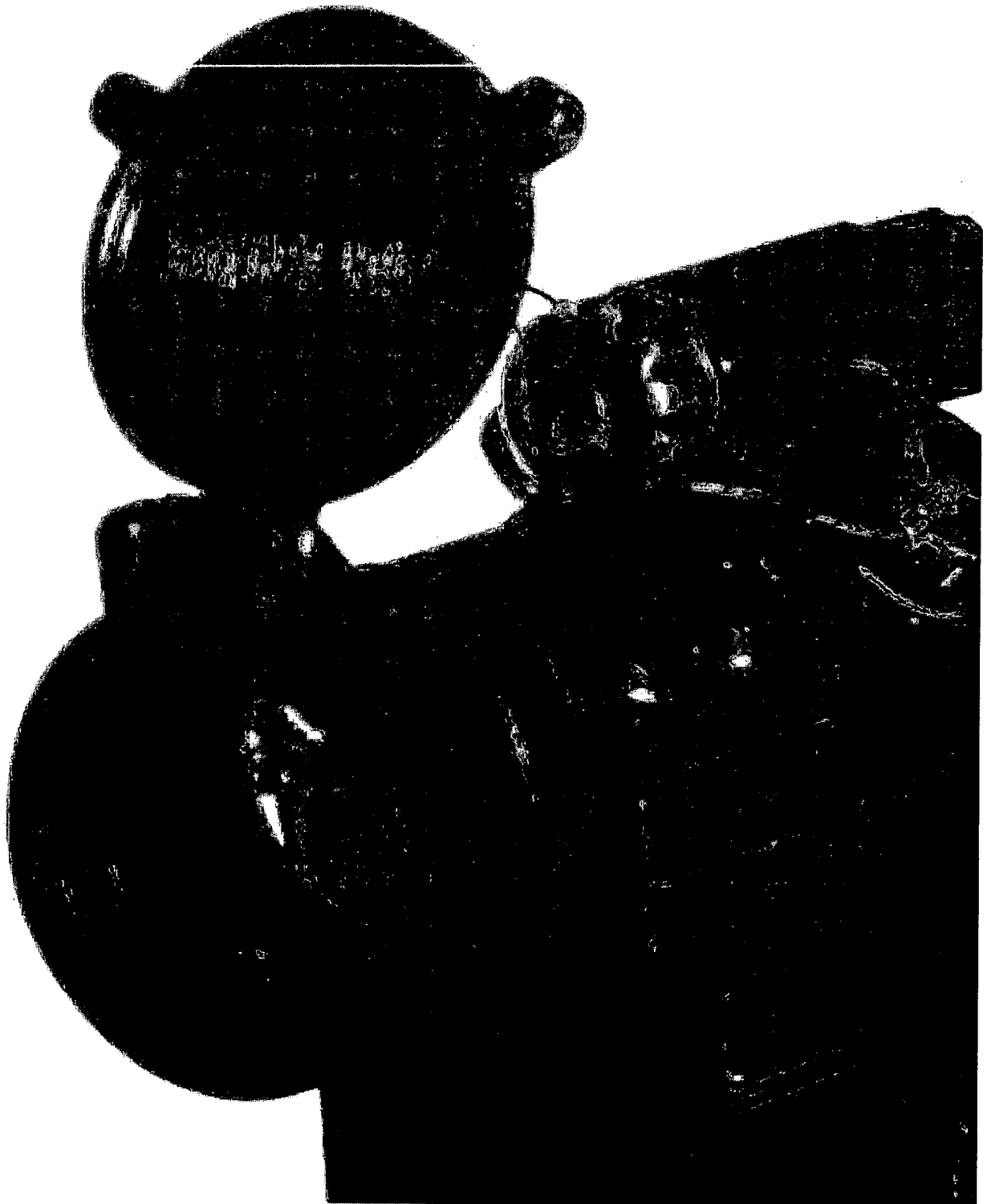


MNVD IRAD Rifle BackView.jpg

Weapon Mnt Photos -April 5, 2000 / MNVD IRAD Rifle IsoLeftObj

5/4/2004



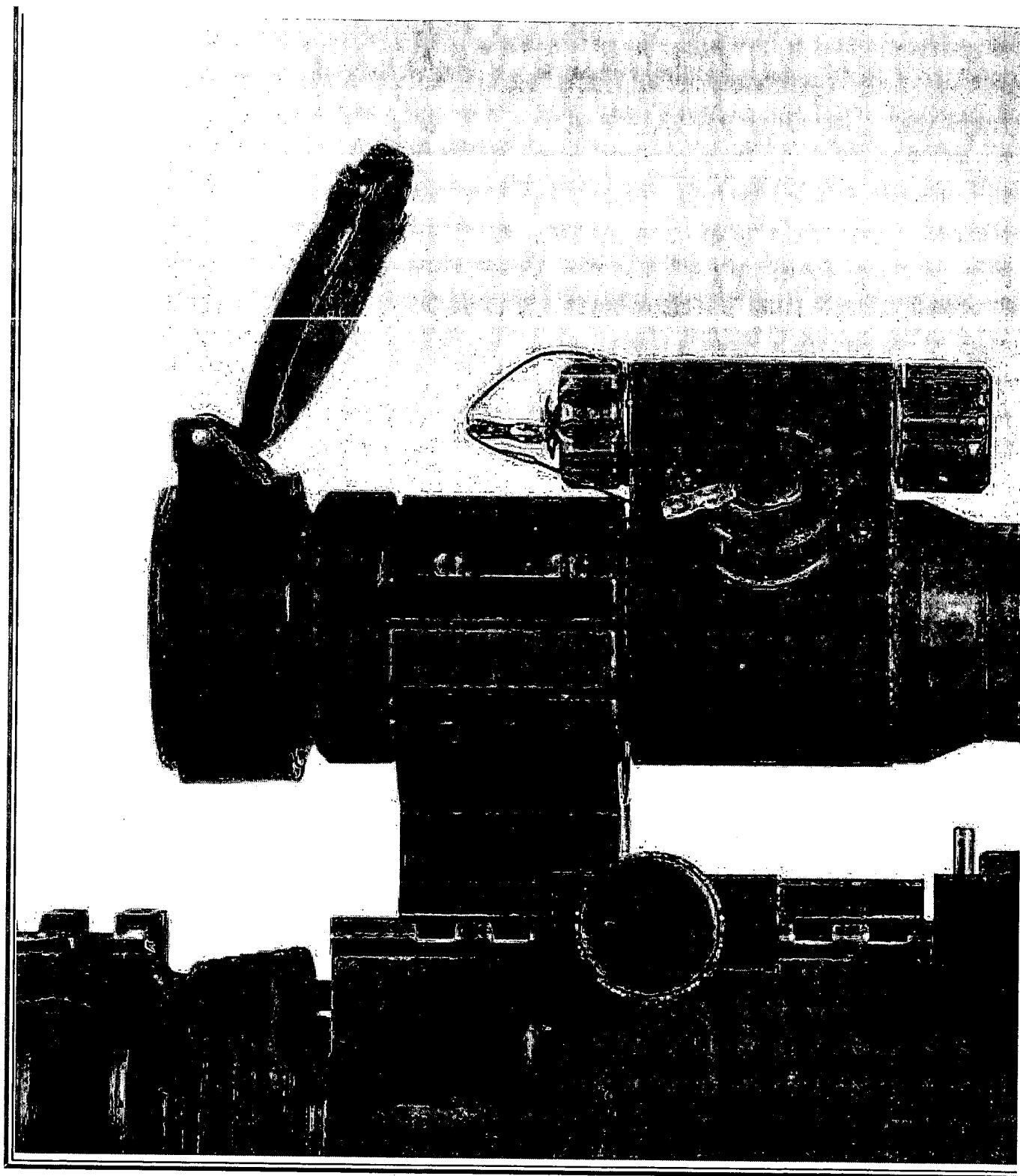


MNVD IRAD Rifle IsoLeftObj.jpg

Weapon Mnt Photos -April 5, 2000 / MNVD IRAD Rifle ProfLeft

5/4/2004



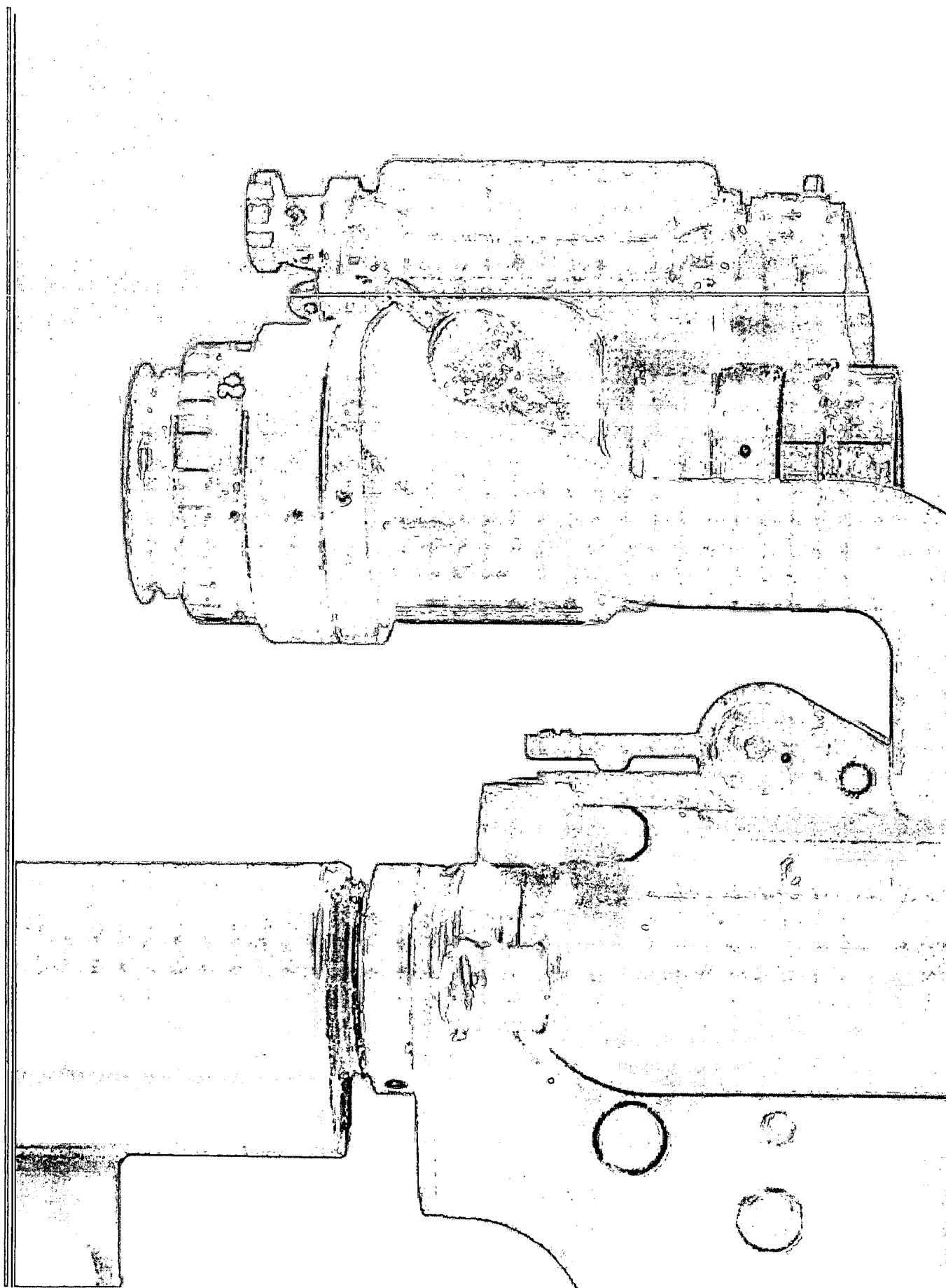


MNVD IRAD Rifle ProfLeft.jpg

Weapon Mnt Photos -April 5, 2000 / MNVD IRAD Rifle ProfRight

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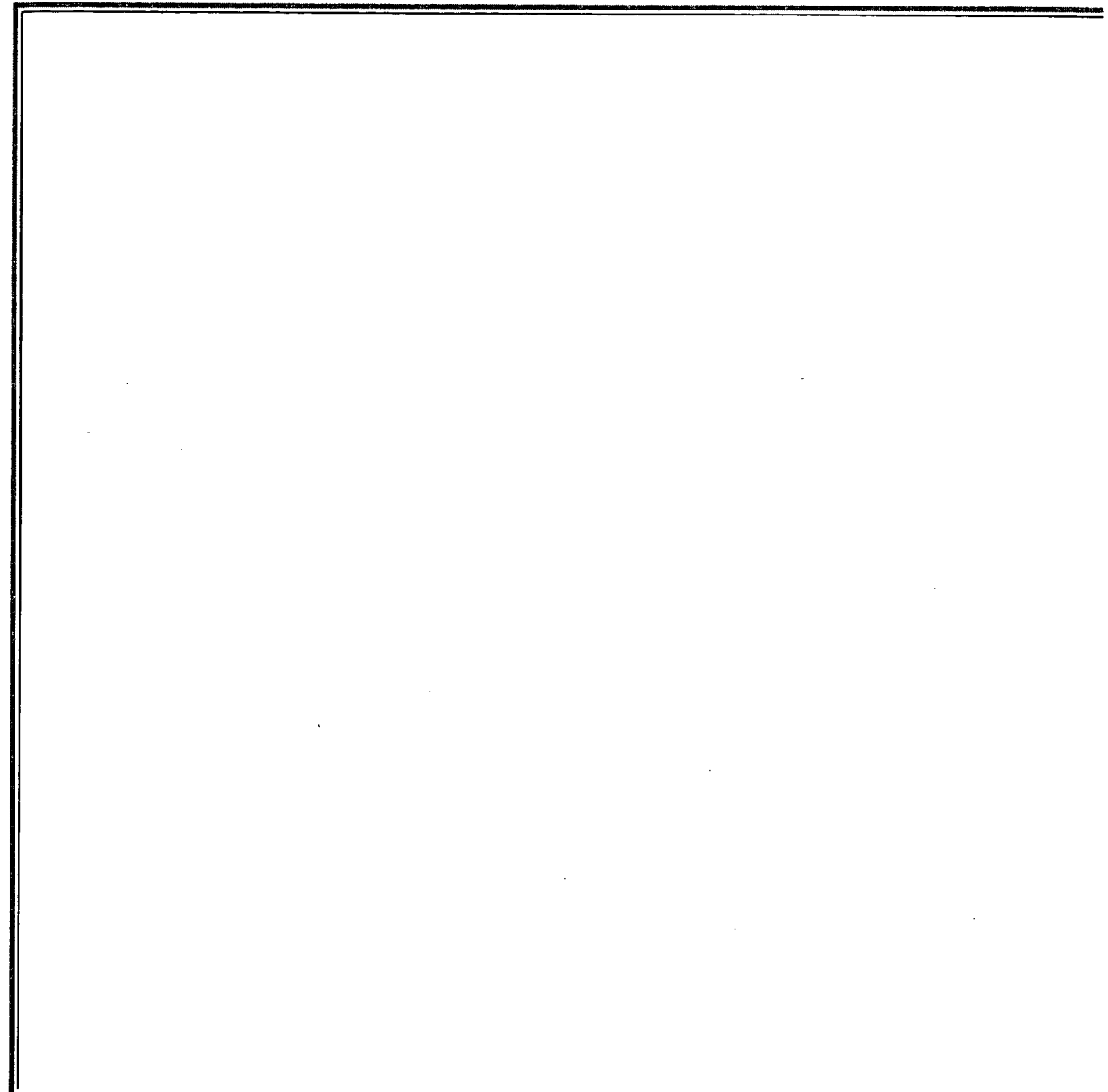


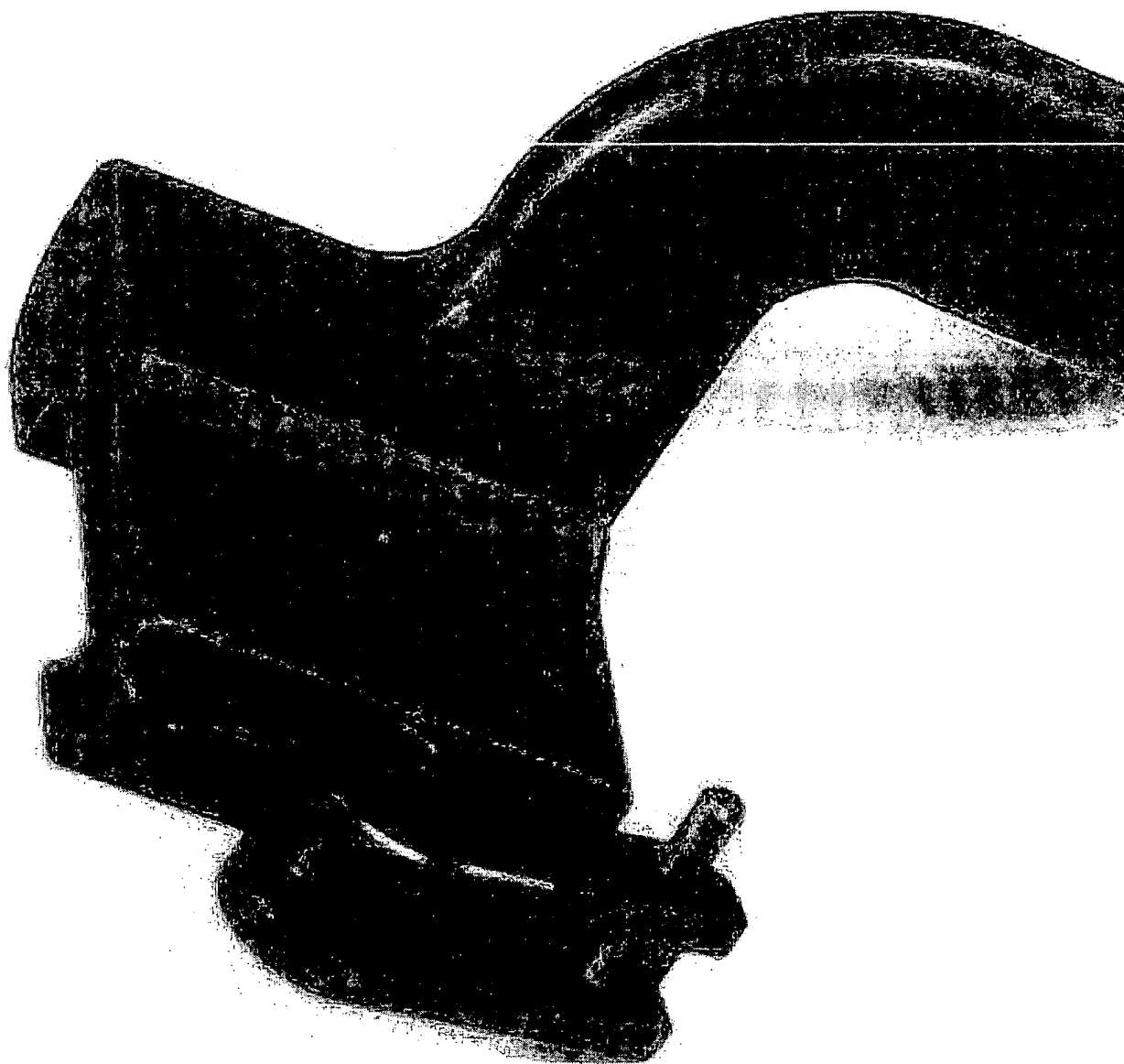


MNVD IRAD Rifle ProfRight.jpg

Weapon Mnt Photos -April 5, 2000 / Mount01

5/4/2004



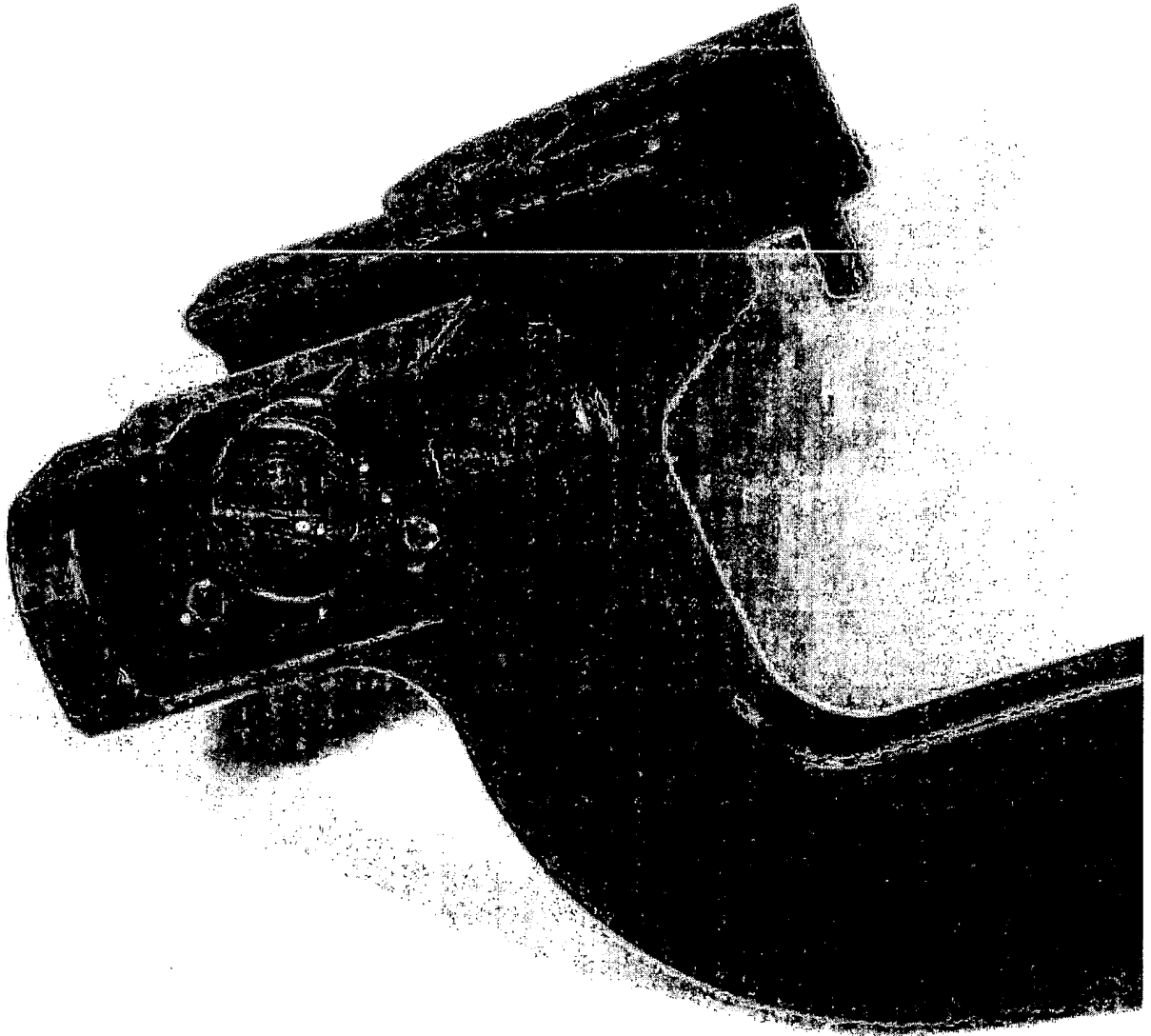


Mount01.jpg

Weapon Mnt Photos -April 5, 2000 / Mount02

5/4/2004





Mount02.jpg

Weapon Mnt Photos -April 5, 2000 /
Mount03

5/4/2004





Mount03.jpg



Weapon Mnt Photos -April 5, 2000 / Mount04

5/4/2004





Mount04.jpg

RECORD OF INVENTION

ITT Defense & Electronics
Patent Department
1650 Tysons Boulevard, Suite 1700
McLean, Virginia 22102
Telephone: (703) 790-6316

File No. DTC- _____

TO
PATENT COUNSEL'S OFFICE

FROM
John Nelson, ITT Night Vision

SUBJECT
Sight Clearing Night Vision Weapon Mount

DATE

SECTION A - INVENTOR'S NAME, SS#, COUNTRY OF CITIZENSHIP AND ADDRESS

NAME(First)	(Middle)	(Last)	Social Security #	Citizen of
John	Carl	Nelson	020-50-9839	USA
ADDRESS (Street No. and Name)		(City)	(State)	(Zip Code)
2309 Franklin Street		Salem	VA	24153
NAME(First)	(Middle)	(Last)	Social Security #	Citizen of
Harry	L.	Buchanan	230-23-5922	USA
ADDRESS (Street No. and Name)		(City)	(State)	(Zip Code)
5634 Legate Drive		Roanoke	VA	24019
NAME(First)	(Middle)	(Last)	Social Security #	Citizen of
Stephen		Lesniowski	156-32-8566	USA
ADDRESS (Street No. and Name)		(City)	(State)	(Zip Code)
1260 Sunny Ridge Road NE		Check	VA	24072
NAME(First)	(Middle)	(Last)	Social Security #	Citizen of
Hector	Manuel	Nebarez	548-39-3129	USA
ADDRESS (Street No. and Name)				
18361 Alder Street		Hesperia	CA	92345

SECTION B - CONCEPTION INFORMATION

When and Where did you first conceive this invention?

Date: ITT Night Vision, Roanoke

Location: ITT Night Vision, Roanoke VA

(A) Date of first sketch or drawing

(B) Where can this be found?

Date:

ITT Night Vision

(A) Date of first written description

(B) Where can this be found?

Date:

First (Type Name of Persons to Whom Disclosed)

(Date of First Disclosure)

Disclosure

To Vince Thomas

Others

SECTION C - CONSTRUCTION AND TEST OF WORKING MODEL

First Working Model or Installation

Date:

Location: ITT Night Vision, Roanoke, Va. John Nelsons' office

First Test or Operation of the Invention

Date:

Location: Shrewsbury Machine, New Castle, VA

SECTION D - USE, SALE AND PUBLICATION INFORMATION

(i) Date of First Public Use (Past or Prospective Use)

(i) Location of such use

Date:

(ii) Date of First Sale or Offer for Sale

(ii) To Whom

Date:

(iii) Date of First Publication

(iii) Name and Place of Publication

N/A

N/A

SECTION E - PROPERTY INFORMATION

Was this invention made under a contract?

☐ YES

☒ NO

If so, what is the contract number?

Is this invention classified by the Government?

☐ YES

☒ NO

What is its classification?

☐ Top Secret

☐ Secret

☐ Classified

SECTION F - FUNDING

A) % ITT funding (IR&D/B&P/company profits from FFP production

100%

B) % 3rd party funding (Government or other)

%

C) Identify ITT R&D case number(s)

and local unit engineering project numbers

SECTION G - INVENTION DISCLOSURE

Disclosure should be by written description or by sketches and each sheet should be signed by the inventor(s) and two competent witnesses. (A competent witness is a person who (1) understands the technical aspects of an invention, and (2) is not a joint inventor.) Following the outline below, briefly describe the invention on a suitable witnessed technical paper and attach it to this form.

1. TITLE OF INVENTION

5. GENERAL DESCRIPTION OF HOW THIS INVENTION OVERCOMES THE AFOREMENTIONED DIFFICULTIES

2. INVENTOR(S)

6. SPECIFIC DESCRIPTION OF THE OPERATION OF THIS INVENTION MENTIONING ALL OF THE COMPONENTS AND FUNCTIONS THEREOF

3. DESCRIPTION OF OTHER SIMILAR DEVICES

4. DESCRIPTION OF SOME OF THE SHORTCOMINGS OF THE ABOVE MENTIONED DEVICES

7. LIST ALL POSSIBLE APPLICATIONS

DUTY OF DISCLOSURE

Inventors have a duty to disclose information of which they are aware and which is material to the evaluation of the patentability of the invention as required by the Patent and Trademark Office. Signing this form as inventor constitutes a certification that all material information has been disclosed on this form or in supplemental sheets attached to this form and an acknowledgement that the duty to disclose such material information continues throughout the preparation and prosecution of any application for United States patent which may arise as a result of the submission of this form. As used herein, material information shall mean information such as prior art patents or publications which describe matters closely related to the invention as well as details of prior uses and sales of products embodying the invention of which the inventors are aware. Material information also includes technical changes to the invention which may be made to modify its performance for which are noted after submission of this form.

ACKNOWLEDGEMENT

I have read and understood the above description of the duty of disclosure required by the United States Patent and Trademark Office of individuals involved SUBSTANTIVELY in the preparation or prosecution of a United States Patent Application. I hereby affirm that to the best of my knowledge and belief, I have complied with that rule by disclosing as of the date of my signature hereto the following items (attach or identify all patents, publications, apparatus, search reports, data or other documents.)

PATENTS

(IF NONE, WRITE "NONE")

PUBLICATIONS AND SEARCH REPORTS

(IF NONE, WRITE "NONE")

OTHER INFORMATION OR DATA

(IF NONE, WRITE "NONE")

INVENTOR SIGNATURE / DATE

INVENTOR SIGNATURE / DATE

INVENTOR SIGNATURE / DATE

INVENTOR SIGNATURE / DATE

Attached invention disclosure reviewed by me:

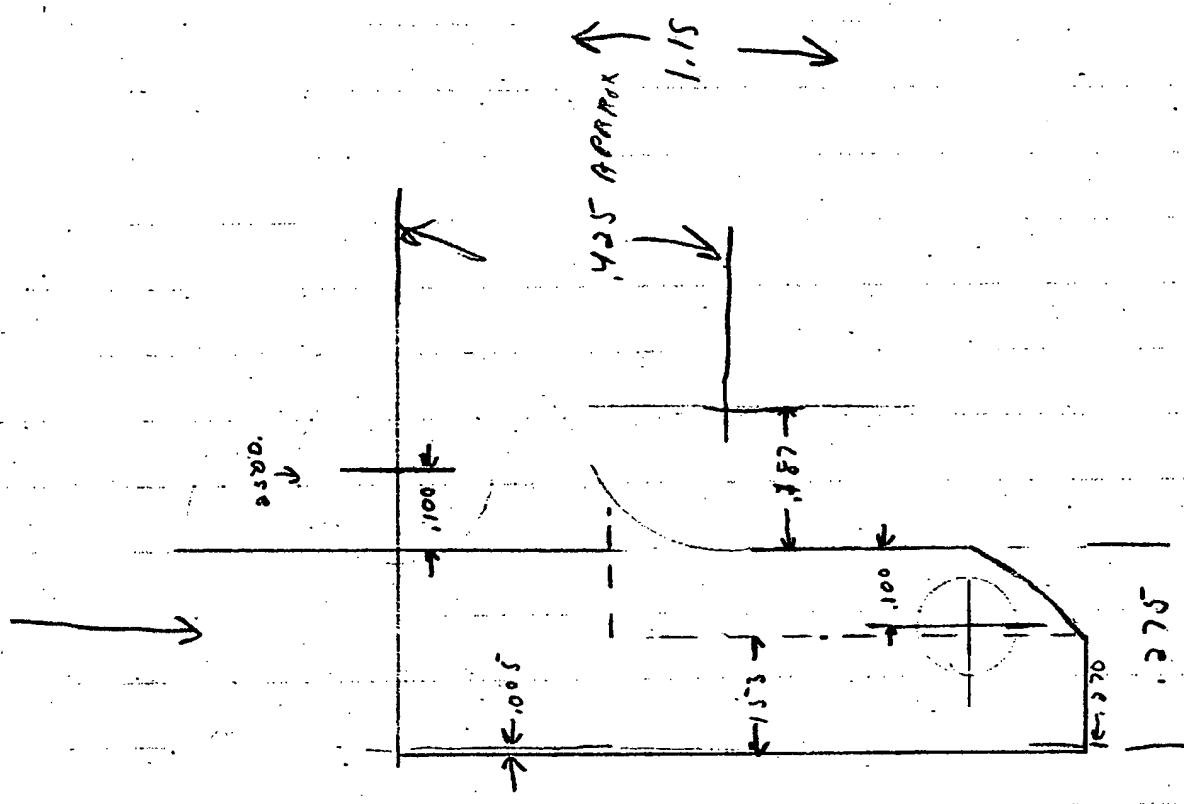
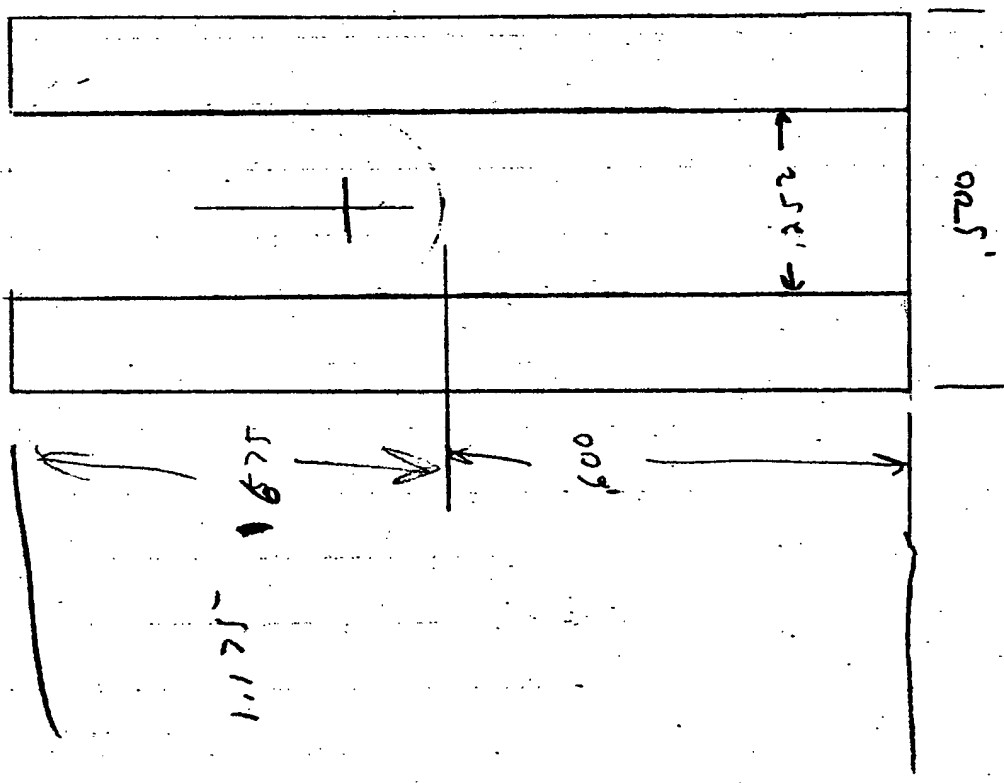
Attorney Signature / Date

Record Of Invention

1. **Title of Invention:** Sight Clearing Night Vision Weapon Mount
2. **Inventor(s):** John C. Nelson, Steve Lesniowski, Hector Manuel Nebarez, and Harry L. Buchanan Jr.
3. **Description of the operation of similar devices:** Other mounts employ either a ratcheting mechanisms or a non-compensating for rail variation cam to attach the night vision monocular to the weapon rail. Mounts are attached to the bottom of the AN/PVS-14 by thumbscrews with round knobs. Mounts are either a fixed low height (less than .75" above rail) or are adjustable for vertical height.
4. **Description of shortcomings of the above-mentioned device:** 1) Does not possess a quick attachment mechanism that will accommodate maximum to minimum dimension Picatiny rails (Rail dimensions can vary by as much as .020"). 2) Do not clear the BUIS (Back Up Iron Sight) while being optically aligned with the military red dot sight. 3) Screw attachment for securing mount to the AN/PVS-14 does not have mechanical advantage of a tee knob for tightening. 4) Are not a rugged one-piece side mounting arm design that allows the mounting of all of the AN/PVS-14 with its 3X Lens, the Red Dot Sight and BUIS on a single Picatiny rail. 5) Will not fit on a standard Weaver rail in addition to the Picatiny because they employ a number 10 bolt or rectangular of similar size as the rail slot interface.
5. **General description of how this invention overcomes the aforementioned difficulties:** 1) Self-adjusting cam allows for quick mounting. Employment of Belleville washers in series provides a short stiff spring action allows the mount to be secure despite varying rail dimensions. 2) Arm design of new mount clears the rail by more than .75" and positions the ANPVS-14s optical center at exactly 1.555" (matching the governments red dot sight). 3) 1/4-20 Tee Knob design provides good mechanical attachment to the MNVD in conjunction with 2 square raised protrusions on weapon mount sandwiching two sides of the A/NPVS-14. 4) New mount employs a one piece side mounting arm that allows the mounting of all of the AN/PVS-14 with its 3X Lens, the Red Dot Sight and BUIS on a single Picatiny rail. 5) New mount will fit on standard weaver rail in addition to the Picatiny rail, by virtue of the smaller diameter employed by using of a number 8 bolt as the rail slot interface
6. **Specific description of the operation of this invention mentioning all of the components and functions thereof:** The Main Arm is a single piece of aluminum that provides an interface to the AN/PVS-14, the cam, the rail interface bolt, v clamp, socket head tee knob, and the, rail. The socket head tee knob is attached to the main arm, by means of a through hole in the arm in conjunction with an e-clip. The socket head tee knob in conjunction with two protrusions from the arm secures the AN/PVS-14 securely to the arm. The rail interface bolt runs through first a series of Belleville washers and then through the v clamp and then on through the arm, it is then attached to the pivoting rod though the cam. The ram is constrained by the raised rectangular protrusion of the arm. The cam when actuated provides a secure interface to the rail despite varying rail dimensions, through the spring action of the Belleville washers in series. The rod through the cam allows easy actuation for release while minimizing snag potential.
7. **List all possible applications:** Mounts for either night vision devices, scopes or thermal weapon sights.

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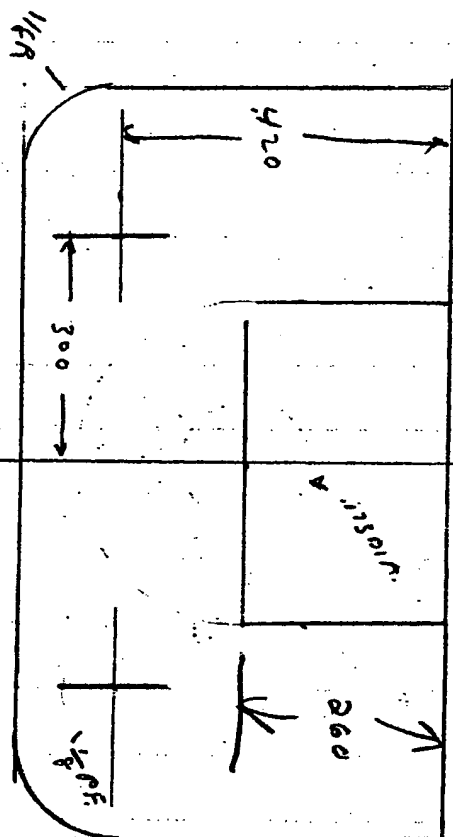
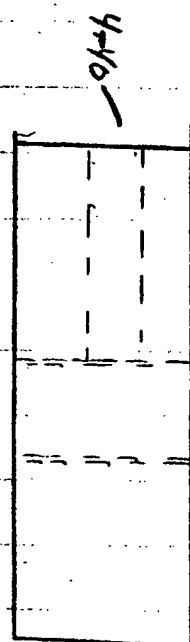
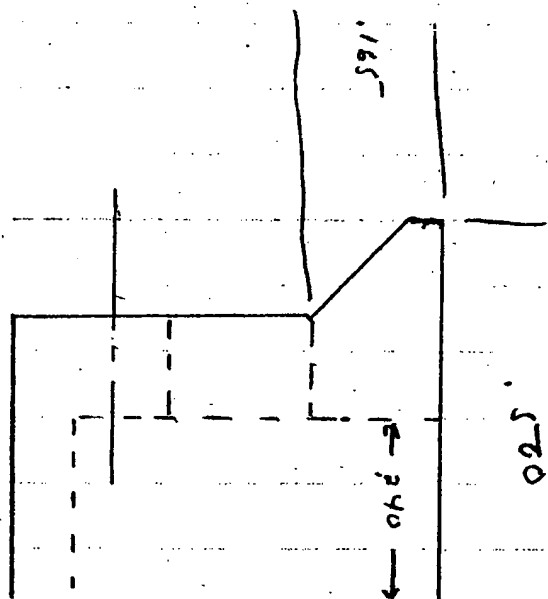
DATE

PREPARED BY	
DATE	

1/8 x 1 SS Dowels
1/8 x 3/4 SS Dowel

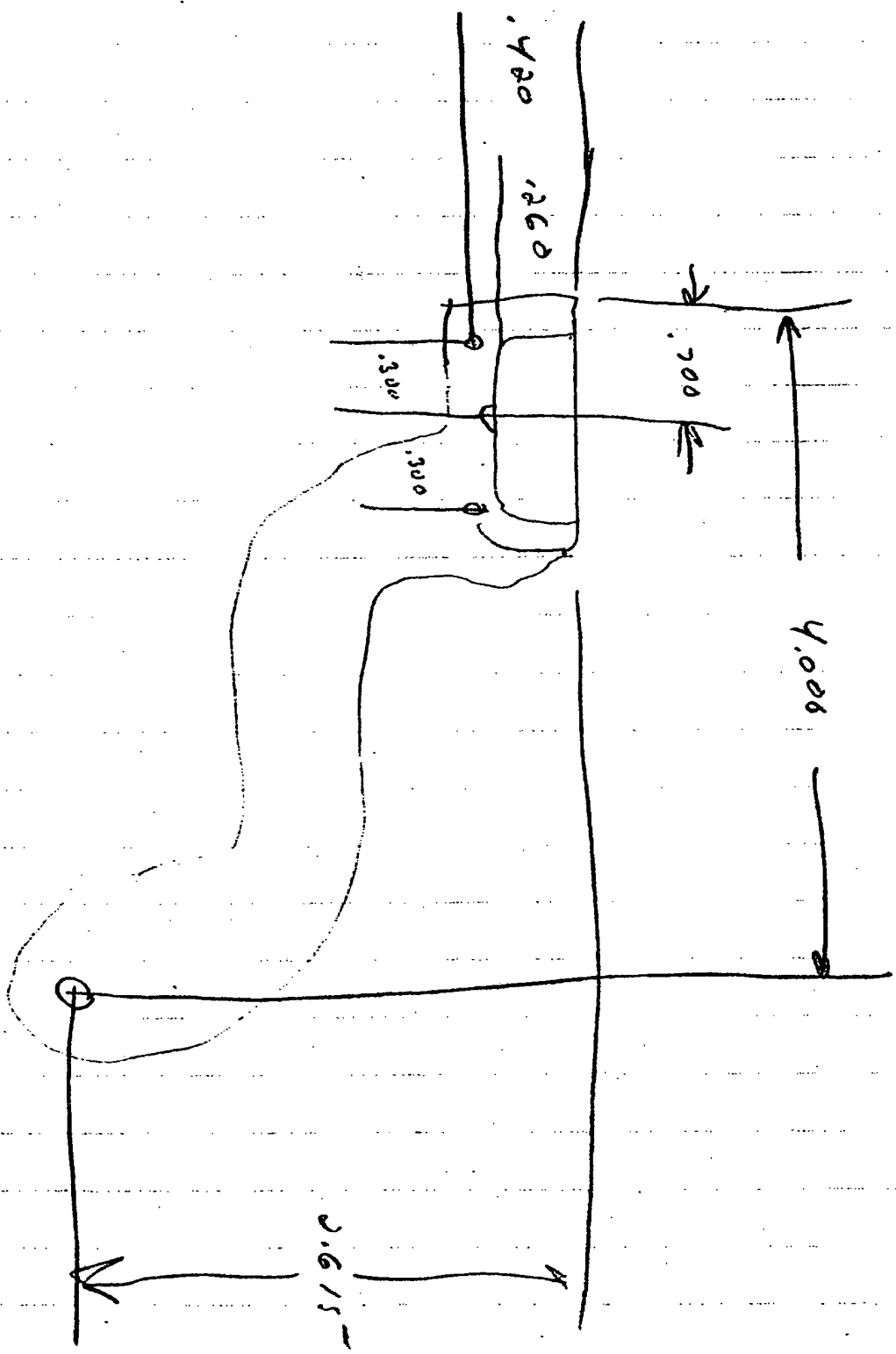
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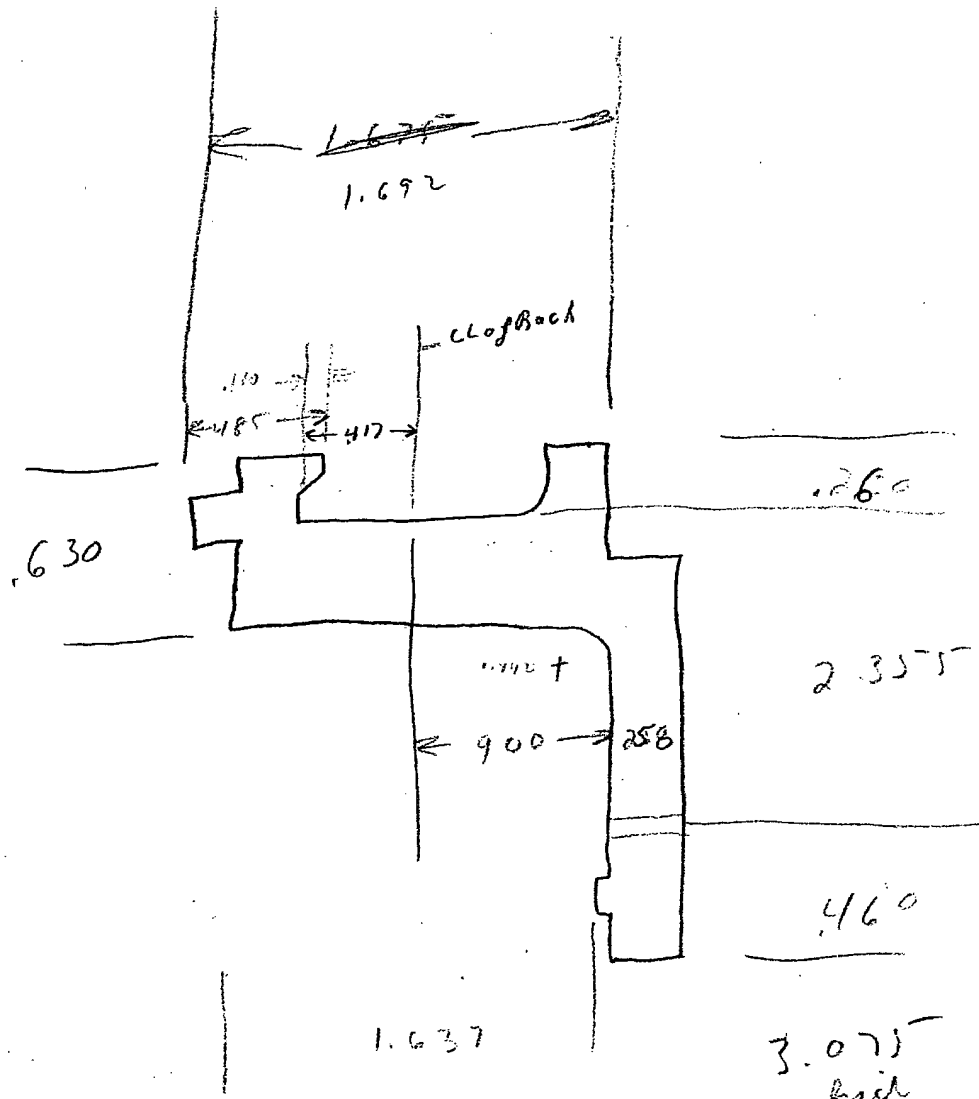
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3.075
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Burgon Tool Steel Co. Inc.

20 Durham St. • Pease Int'l Tradeport • Portsmouth, N.H. 03801 • Tel: (603) 430-9200

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Performance Clamping

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275.0
→

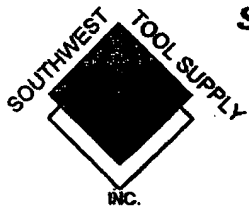
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Southwest Tool Supply, Inc.

690 North Franklin Street
Christiansburg, VA 24073
(540) 381-1545

FAX: (540) 381-1893

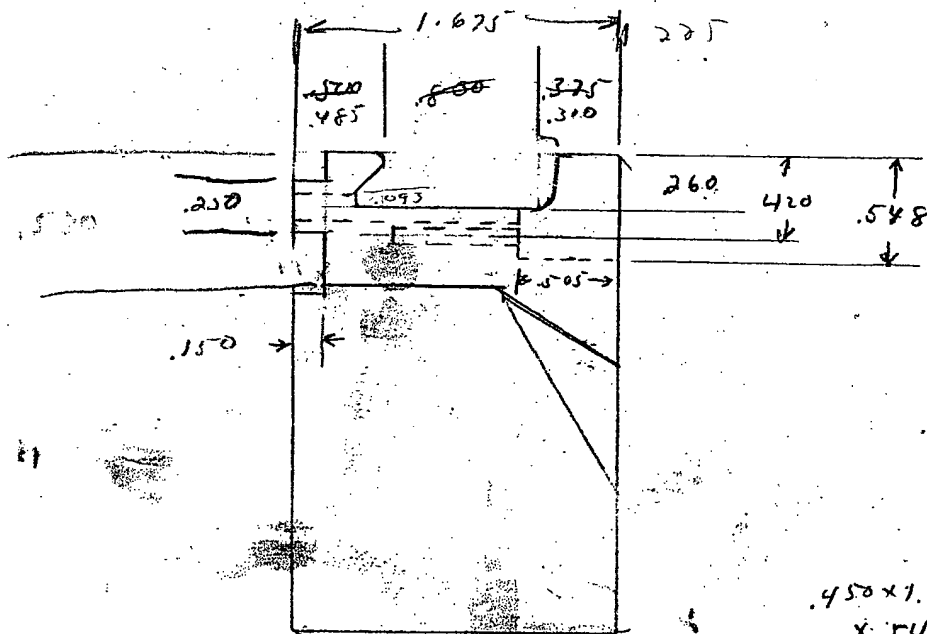
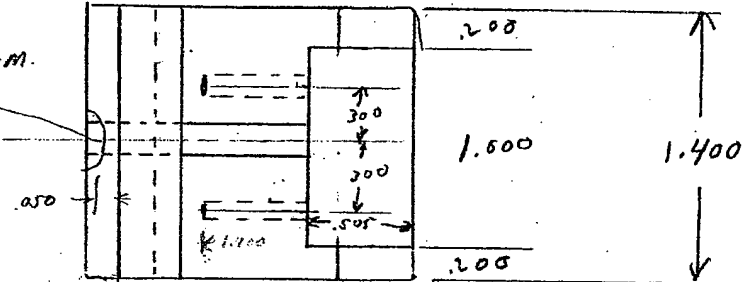
Email: SWTOOL@aol.com



Performance Clamping

Carry Slide
7075 ALUM .120 →
Main Body
6061 ALUM.

.125R



450 x 1.000
x .548



Southwest Tool Supply, Inc.

690 North Franklin Street

Christiansburg, VA 24073

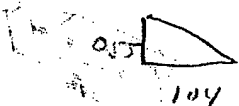
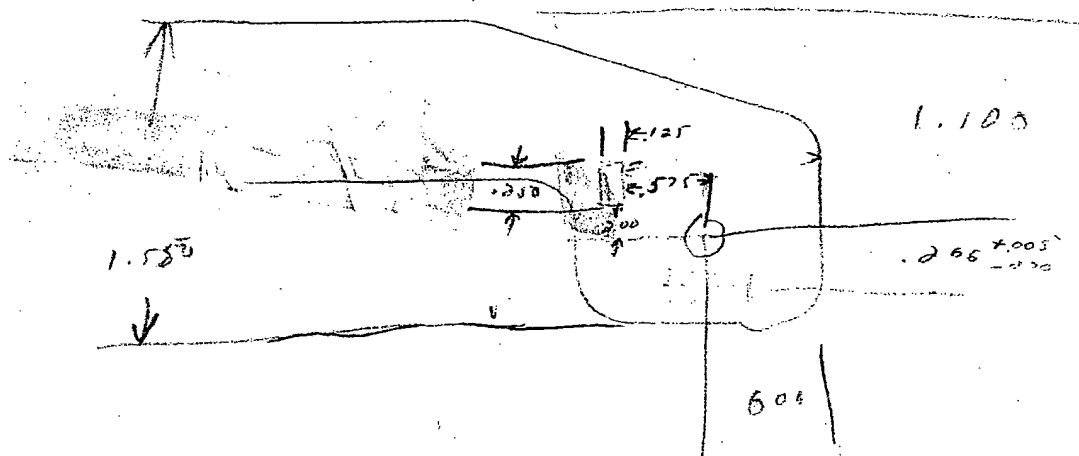
(540) 381-1545

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Email: SWTOOL@aol.com

21 575
 21 350
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 sum 0
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$\frac{+ .075}{- .075} = \frac{1}{-1}$



$$\frac{(0.5)}{1.04} = \tan$$

$$\gamma = \begin{matrix} +.250 \\ -.250 \\ \hline \end{matrix}$$

$$y = \begin{matrix} -.163 \\ -.373 \end{matrix}$$

$$\gamma = \begin{matrix} .575 \\ .700 \end{matrix}$$

$$\beta = \begin{matrix} .200 \\ .750 \end{matrix}$$



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N.H. WATS: 1-800-582-7223

-2-4004

RECORD OF INVENTION

ITT Defense & Electronics
 Patent Department
 1650 Tysons Boulevard, Suite 1700
 McLean, Virginia 22102
 Telephone: (703) 790-6316

File No. DTC- D-EOP-0254

TO
PATENT COUNSEL'S OFFICE

FROM

SUBJECT
 Sight Clearing Weapon Mount

DATE

SECTION A - INVENTOR'S NAME, SS#, COUNTRY OF CITIZENSHIP AND ADDRESS

NAME(First) John	(Middle) Carl	(Last) Nelson	Social Security # 020-50-9839	Citizen of USA
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NAME(First) Harrison	(Middle) Lewis	(Last) Buchanan, Jr.	Social Security # 230-23-5922	Citizen of USA
ADDRESS (Street No. and Name) 5634 Legate Drive		(City) Roanoke	(State) VA	(Zip Code) 24019
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NAME(First) Hector	(Middle) Manuel	(Last) Nebarez	Social Security # 548-39-3129	Citizen of USA
ADDRESS (Street No. and Name) 18361 Alder Street		(City) Hesperia	(State) CA	(Zip Code) 92345

SECTION B - CONCEPTION INFORMATION

When and Where did you first conceive this invention?

Date:

Location: ITT Industries Night Vision, Roanoke VA

(A) Date of first sketch or drawing

Date:

(B) Where can this be found?

John Nelson's Engineering Files

(A) Date of first written description

Date:

(B) Where can this be found?

Record of Invention

First

(Type Name of Persons to Whom Disclosed)

(Date of First Disclosure)

Disclosure

To

Vince Thomas

Others

SECTION C - CONSTRUCTION AND TEST OF WORKING MODEL

First Working Model or Installation

Date:

Location: ITT Industries Night Vision, Roanoke, VA

First Test or Operation of the Invention

Date:

Location: Shrewsbury Machine, New Castle, VA

SECTION D - USE, SALE AND PUBLICATION INFORMATION

(I) Date of First Public Use (Past or Prospective Use)

Date:

(I) Location of such use

(II) Date of First Sale or Offer for Sale

Date:

(II) To Whom

(III) Date of First Publication

N/A

(III) Name and Place of Publication

N/A

SECTION E - PROPERTY INFORMATION

Was this invention made under a contract?

If so, what is the contract number?

☐ YES☒ NO

Is this invention classified by the Government?

☐ YES☒ NO

What is its classification?

☐ Top Secret☐ Secret☐ Classified**SECTION F - FUNDING**

A) % ITT funding (IR&D/B&P/company profits from FFP production

100%

B) % 3rd party funding (Government or other)

C) Identify ITT R&D case number(s)

%

and local unit engineering project numbers

SECTION G - INVENTION DISCLOSURE

Disclosure should be by written description or by sketches and each sheet should be signed by the inventor(s) and two competent witnesses. (A competent witness is a person who (1) understands the technical aspects of an invention, and (2) is not a joint inventor.) Following the outline below, briefly describe the invention on a suitable witnessed technical paper and attach it to this form.

1. TITLE OF INVENTION

2. INVENTOR(S)

3. DESCRIPTION OF OTHER SIMILAR DEVICES

4. DESCRIPTION OF SOME OF THE SHORTCOMINGS OF THE ABOVE MENTIONED DEVICES

5. GENERAL DESCRIPTION OF HOW THIS INVENTION OVERCOMES THE AFOREMENTIONED DIFFICULTIES

6. SPECIFIC DESCRIPTION OF THE OPERATION OF THIS INVENTION MENTIONING ALL OF THE COMPONENTS AND FUNCTIONS THEREOF

7. LIST ALL POSSIBLE APPLICATIONS

DUTY OF DISCLOSURE

Inventors have a duty to disclose information of which they are aware and which is material to the evaluation of the patentability of the invention as required by the Patent and Trademark Office. Signing this form as inventor constitutes a certification that all material information has been disclosed on this form or in supplemental sheets attached to this form and an acknowledgement that the duty to disclose such material information continues throughout the preparation and prosecution of any application for United States patent which may arise as a result of the submission of this form. As used herein, material information shall mean information such as prior art patents or publications which describe matters closely related to the invention as well as details of prior uses and sales of products embodying the invention of which the inventors are aware. Material information also includes technical changes to the invention which may be made to modify its performance for which are noted after submission of this form.

ACKNOWLEDGEMENT

I have read and understood the above description of the duty of disclosure required by the United States Patent and Trademark Office of individuals involved SUBSTANTIALLY in the preparation or prosecution of a United States Patent Application. I hereby affirm that to the best of my knowledge and belief, I have complied with that rule by disclosing as of the date of my signature hereto the following items (attach or identify all patents, publications, apparatus, search reports, data or other documents.)

PATENTS**PUBLICATIONS AND SEARCH REPORTS**

(IF NONE, WRITE "NONE")

OTHER INFORMATION OR DATA

(IF NONE, WRITE "NONE")

(IF NONE, WRITE "NONE")

John Carl Nelson
INVENTOR SIGNATURE / DATE

Harison Davis Buchanan, Jr.
INVENTOR SIGNATURE / DATE

Stephen Lesniowski
INVENTOR SIGNATURE / DATE

Robert M. ...
INVENTOR SIGNATURE / DATE

Attached invention disclosure reviewed by me:

Attorney Signature / Date

Record Of Invention

1. **Title of Invention:** Sight Clearing Weapon Mount
2. **Inventor(s):** John Nelson, Harry Buchanan, Steve Lesniowski, and Hector Nebarez
3. **Description of the operation of similar devices:**

The current AN/PVS-14 weapon mounts are used for mounting the AN/PVS-14 Night Vision Monocular Device (MNVD) to the M16/M4 receiver rail. Weapon mounts incorporate a means of fastening the optical device to the weapon mount and then securely fastening the weapon mount to the weapon's receiver rail. It is important for the mounting mechanisms to be easy and quick to operate while providing a secure and robust mechanical attachment. In order for the shooter to maintain their normal shooting position, weapon mounts must also provide correct vertical positioning and allow for proper fore/aft adjustment to allow the shooter to position the AN/PVS-14 in the proper location.

4. **Description of shortcomings of the above-mentioned device:**

Other weapon mounts do not allow for proper mounting of the AN/PVS-14 when used in conjunction with the Back-up Iron Sight (BUIS). The U.S. Military desires for the BUIS to remain constantly mounted on the weapon during daytime and nighttime operations. Therefore the AN/PVS-14 must be mounted in front of the BUIS, which is usually mounted at the far rear portion of the M16/M4 receiver rail. If the AN/PVS-14 is mounted in front of the BUIS, then the sight is too far forward and the user is unable to position his eye at the desired eye relief distance of the sight and maintain his natural shooting position. Other weapon mounts do not vertically align the AN/PVS-14's optical axis with the M68 Close Combat Optic. Other weapon mounts do not possess a quick attachment/release mechanism that will accommodate maximum to minimum dimension Picatiny Rails (the nickname for the standard M16/M4 receiver rail). Other weapon mounts employ either complicated ratcheting mechanisms or a non-compensating cam for rail variation to attach the night vision device to the weapon's receiver rail. Other weapon mounts utilize a thumbscrew attachment for securing the weapon mount to the AN/PVS-14 does not have the mechanical advantage of a "T" knob for sufficient tightening. Other weapon mounts do not allow the combined mounting of the AN/PVS-14 with the 3X Magnifier Lens, M68 Close Combat Optic and BUIS on a single M16/M4 receiver rail. Other weapon mounts will not fit on a standard Weaver Rail in addition to the Picatiny Rail because they employ a #10 rail bolt or rectangular slot locating bar of similar size as the rail slot interface.

5. **General description of how this invention overcomes the aforementioned difficulties:**

This weapon mount is designed to position the AN/PVS-14 above the BUIS, providing clearance for the BUIS restrictive space envelope, and enable the correct fore/aft positioning of the AN/PVS-14 on the M16/M4 receiver rail for optimal shooting location and eye relief distance.

This weapon mount positions the AN/PVS-14 high enough above the M16/M4 receiver rail to provide clearance for the BUIS "stay out zone", while optimizing the vertical alignment with the optical axis of the M68 Close Combat Optic. It also allows unimpeded access to the charging lever of the M16/M4. This weapon mount incorporates a self-adjusting cam allowing for quick mounting/removal of the weapon mount to the weapon. The employment of Belleville washers in series provides a short stiff spring action allowing the weapon mount to mount securely to the weapon despite varying rail dimensions. The "T" shaped mounting knob enables the user to obtain

a secure mechanical attachment of the weapon mount to the AN/PVS-14. The two raised protrusions on either side of the mounting knob aid in stabilizing the AN/PVS-14 during weapon shock. This weapon mount allows the combined mounting of the AN/PVS-14 with its 3X Lens, the Close Combat Optic and Back-up Iron Sight on a single Picatinny rail. This weapon mount will also fit on the standard Weaver Rail in addition to the Picatinny Rail by utilization of a #8 bolt as the rail slot interface.

6. **Specific description of the operation of this invention mentioning all of the components and functions thereof:**

The Sight Clearing Weapon Mount (See Figure 1) provides for mounting the AN/PVS-14 to the M16/M4 receiver rail. It allows for use with the BUIS and optimizes vertical positioning for use with the M68 Close Combat Optic.

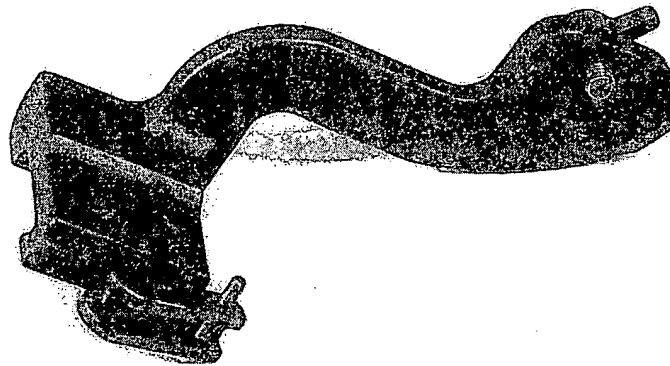


Figure 1. *Sight Clearing Weapon Mount*

The base is a single piece of aluminum that provides an interface to the AN/PVS-14, locking cam, rail interface bolt, clamp, mounting "T" knob, and M16/M4 receiver rail. The base is designed to provide clearance for the BUIS restrictive space envelope, provide optimized vertical alignment with the optical axis of the M68 Close Combat Optic, and allow for optimized fore/aft positioning of the AN/PVS-14 to maintain the proper eye relief distance during shooting (See Figure 2).

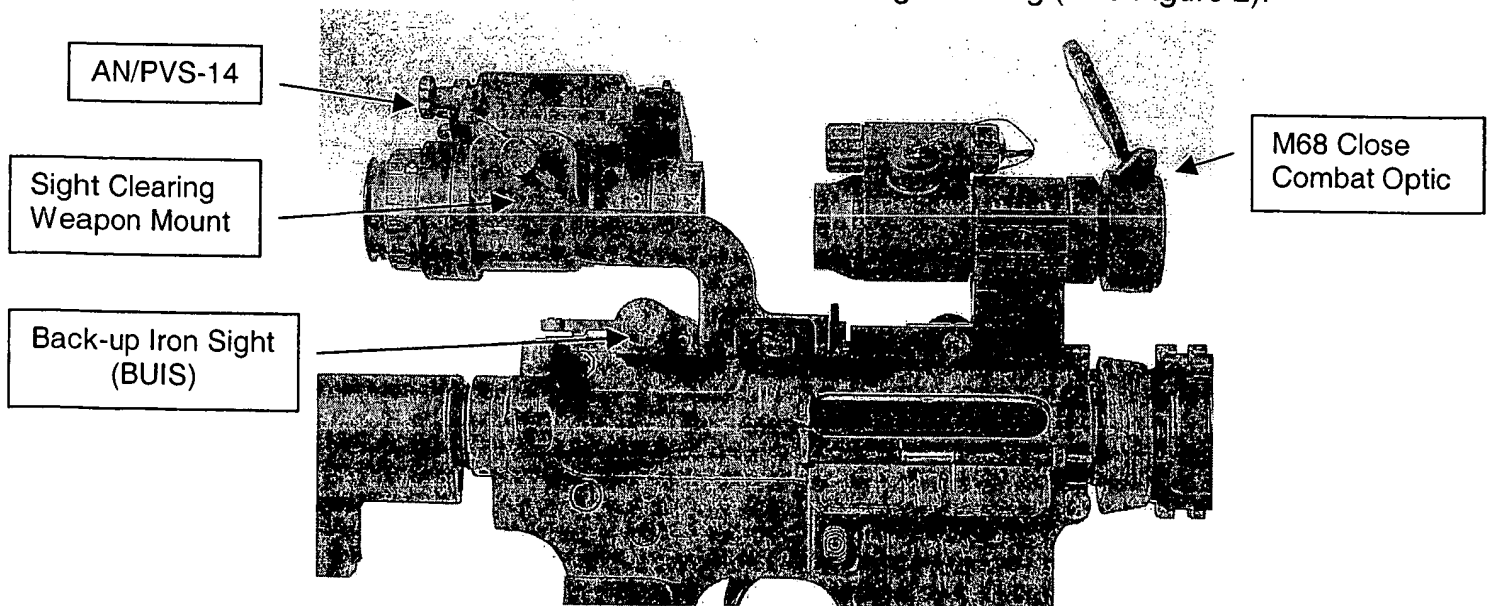


Figure 2. *Sight Clearing Weapon Mount on M16/M4 Receiver Rail*

The cam operated clamping mechanism provides a means for quickly and quietly mounting/removing the AN/PVS-14 to/from the M16/M4. To install the weapon mount to the weapon, the user must simply locate the clamping surface of the weapon mount on the weapon's receiving rail and rotate the cam approximately 180°. Upon rotation of the cam, the weapon mount is fastening to the rail very securely and can be removed by simply rotating the cam in the opposite direction 180°. The mounting or removal of the weapon mount can be done very quietly if so desired.

The clamping mechanism (See Figure 3) consists of a cam, clamp, rail bolt, series of Belleville washers, pivot pin, release pin, guide pins, and springs. Two guide pins are threaded into the clamp and allow the clamp to slide back and forth as the guide pins engage two cylindrical bores in the base. Springs are loaded onto these guide pins to force the clamp outward when the cam is not engaged.

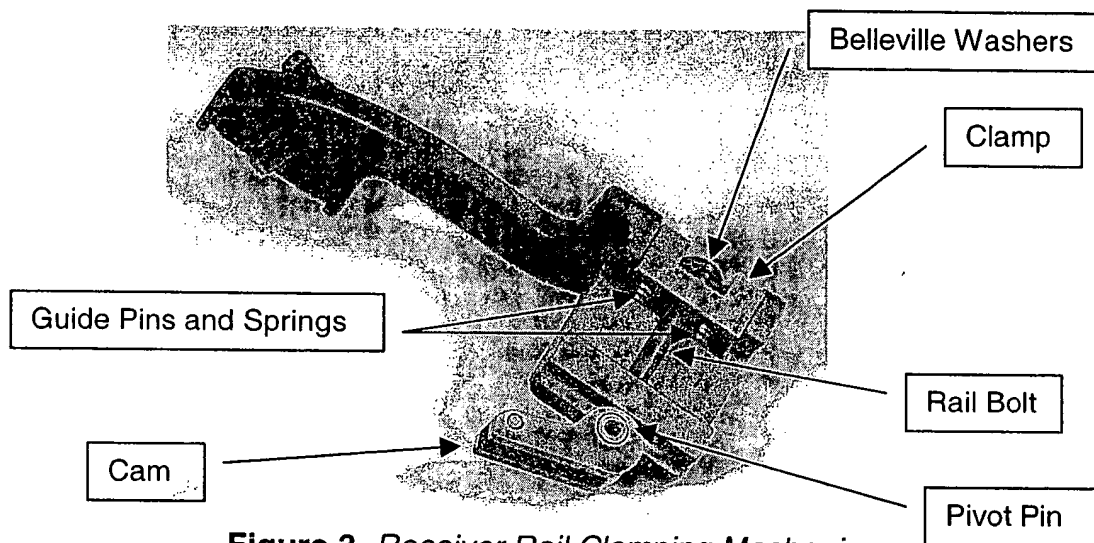


Figure 3. Receiver Rail Clamping Mechanism

The rail bolt first runs through a series of Belleville washers, through the clamp, through the base, and then threads into the cam pivot rod (See Figure 4). The clamp maintains perpendicular alignment to the weapon's receiver rail by a recessed rectangular slot in the base. The cam and clamp provide a secure interface to the weapon's receiver rail despite varying rail dimensions, through the spring action of the Belleville washers in series. The pivot rod acts as the center of rotation for the cam and also as a fastener point for the rail bolt. The release rod (See Figure 4) allows for easy actuation by the user during mount release while minimizing snag potential.

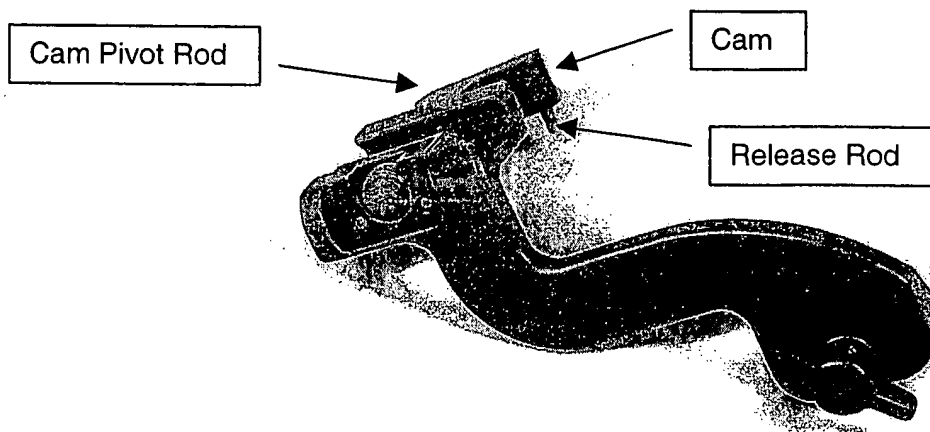


Figure 4. Cam Pivot Rod and Release Rod

The mounting "T" knob (See Figure 5) is captivated to the base by means of an e-clip thus preventing accidental loss of the mounting "T" knob. The mounting "T" knob provides a mechanical advantage to the user during the fastening process. Two alignment protrusions (See Figure 5) provide alignment between the AN/PVS-14 and the weapon mount during fastening and also serve to prevent rotation of AN/PVS-14 during weapon shock.

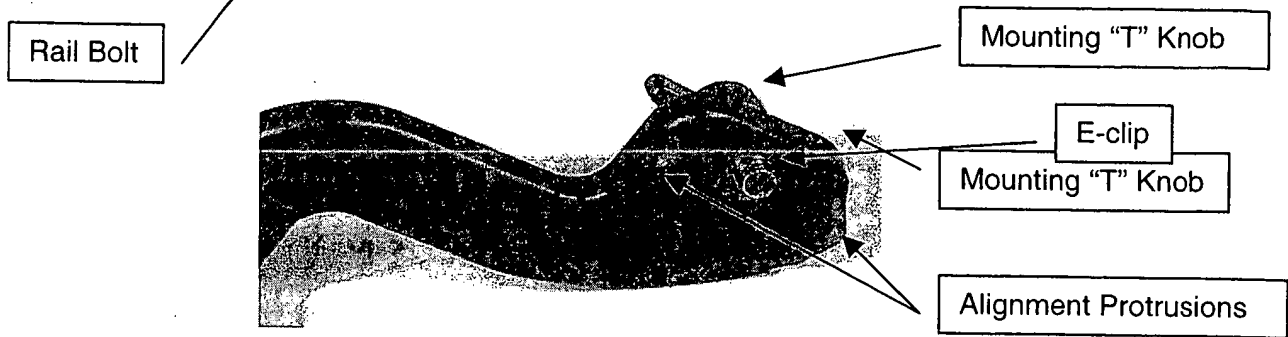


Figure 5. Mounting Interface to AN/PVS-14

In summary, the sight clearing weaponmount solves a problem created by the requirement of the BUIS being permanently mounted at the rear portion of the M16/M4 receiver rail. This weaponmount positions the AN/PVS14 at the lowest vertical position without interfering with the BUIS "stay out" zone, provides uninhibited access to the M16/M4 charging handle, and delivers robust mounting interfaces to both the M16/M4 receiver rail and the AN/PVS-14 (See Figure 6).

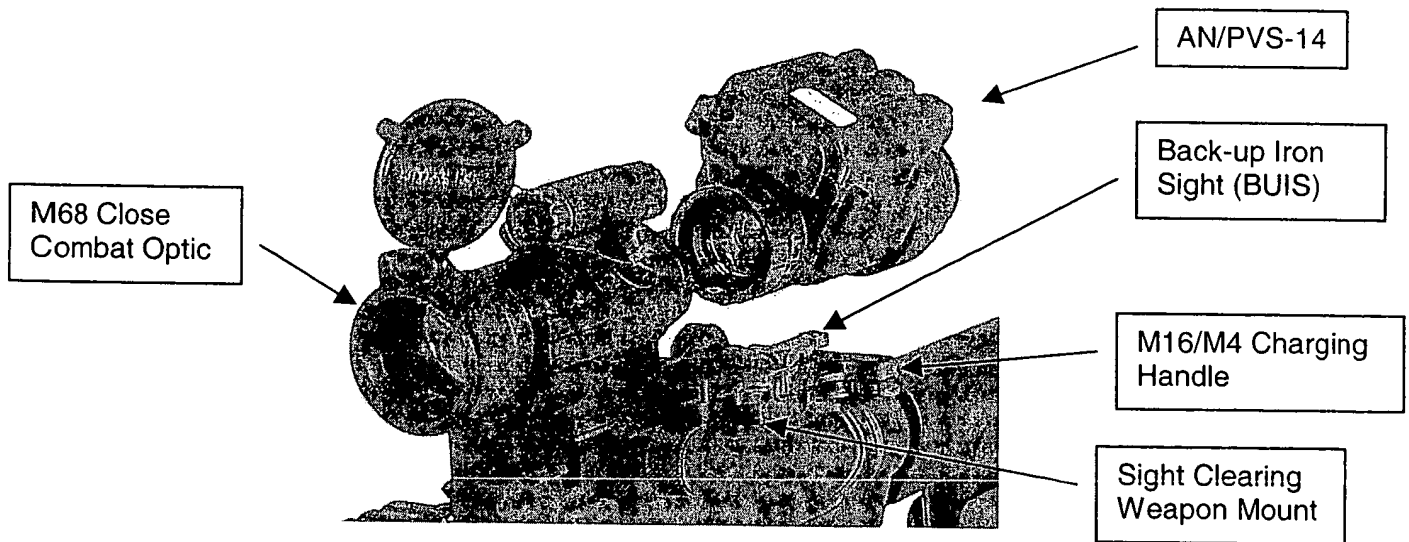


Figure 6. Provides Clearance for BUIS and Uninhibited Access to M16/M4 Charging Handle

6. List all possible applications:

This weapon mount is designed specifically for use with the AN/PVS-14. However, several features of this weapon mount such as the cam action attachment/removal mechanism could serve in weapon mounts for other night vision devices, thermal weapon sights, or other optical sights.

DECLARATION AND POWER TO PROSECUTE

As a below named inventor, I hereby declare that:

My residence, mailing address and citizenship are as stated next to my name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Clamp for Weapon Mount

the specification of which:

[] is attached hereto;

[x] was filed on September 29, 2003 as United States Application Serial No. 10,671,630 or PCT International Application No. _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or (f), or §365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or §365(a) of any PCT international application(s) which designated at least one country other than the United States of America listed below, and have also identified below any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application(s) having a filing date before that of the application(s) on which priority is claimed.

Prior Foreign Application(s)

APPLICATION NUMBER	COUNTRY	DATE OF FILING (day, month, year)	PRIORITY NOT CLAIMED	CERTIFIED COPY ATTACHED?
			<input type="checkbox"/>	<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/>	<input type="checkbox"/> YES <input type="checkbox"/> NO

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below:

(Application Number)

(Filing Date) (day, month, year)

(Application Number)

(Filing Date) (day, month, year)

I hereby claim the benefit under 35 U.S.C. §120 and/or §365 of any United States application(s) or of any international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior application(s) in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56 which became available between the filing date(s) of the prior application(s) and the national or PCT international filing date of this application:

Prior U.S. Application(s) or PCT International Applications Designating the U.S. for benefit under 35 U.S.C. §120

U.S. APPLICATIONS		STATUS (<i>check one</i>)		
U.S. APPLICATION NO.	U.S. FILING DATE (day, month, year)	Pending	Patented	Abandoned
09/847,293	May 3, 2001	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO.	PCT FILING DATE (day, month, year)	U.S. APPLICATION NOS. (if any)		
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>


As a named inventor, I hereby appoint the registered practitioners of EDELL, SHAPIRO & FINNAN, LLC included in the Customer Number provided below to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith; I further direct that correspondence concerning this application be directed to:

EDELL, SHAPIRO & FINNAN, LLC
1901 Research Boulevard, Suite 400
Rockville, MD 20850
Phone: (301) 424-3640
Fax: (301) 762-4056


CUSTOMER NUMBER: 27896

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor: John Carl Nelson

Inventor's signature  Date 7-23-04
Residence: Salem, Virginia
Citizen of: U.S.
Address: 2309 Franklin Street
Salem, VA 24153

Full name of second inventor: Stephen Lesniowski

Inventor's signature  Date 7/23/04
Residence: Check, Virginia
Citizen of: U.S.
Address: 1260 Sunny Ridge Road NE
Check, VA 24072

Full name of third inventor:

Inventor's signature _____ Date _____
Residence: _____
Citizen of: _____
Address: _____